Isolated Facility Capacity Sensitivity Analysis

BDCP Conveyance Workgroup

May 6, 2009

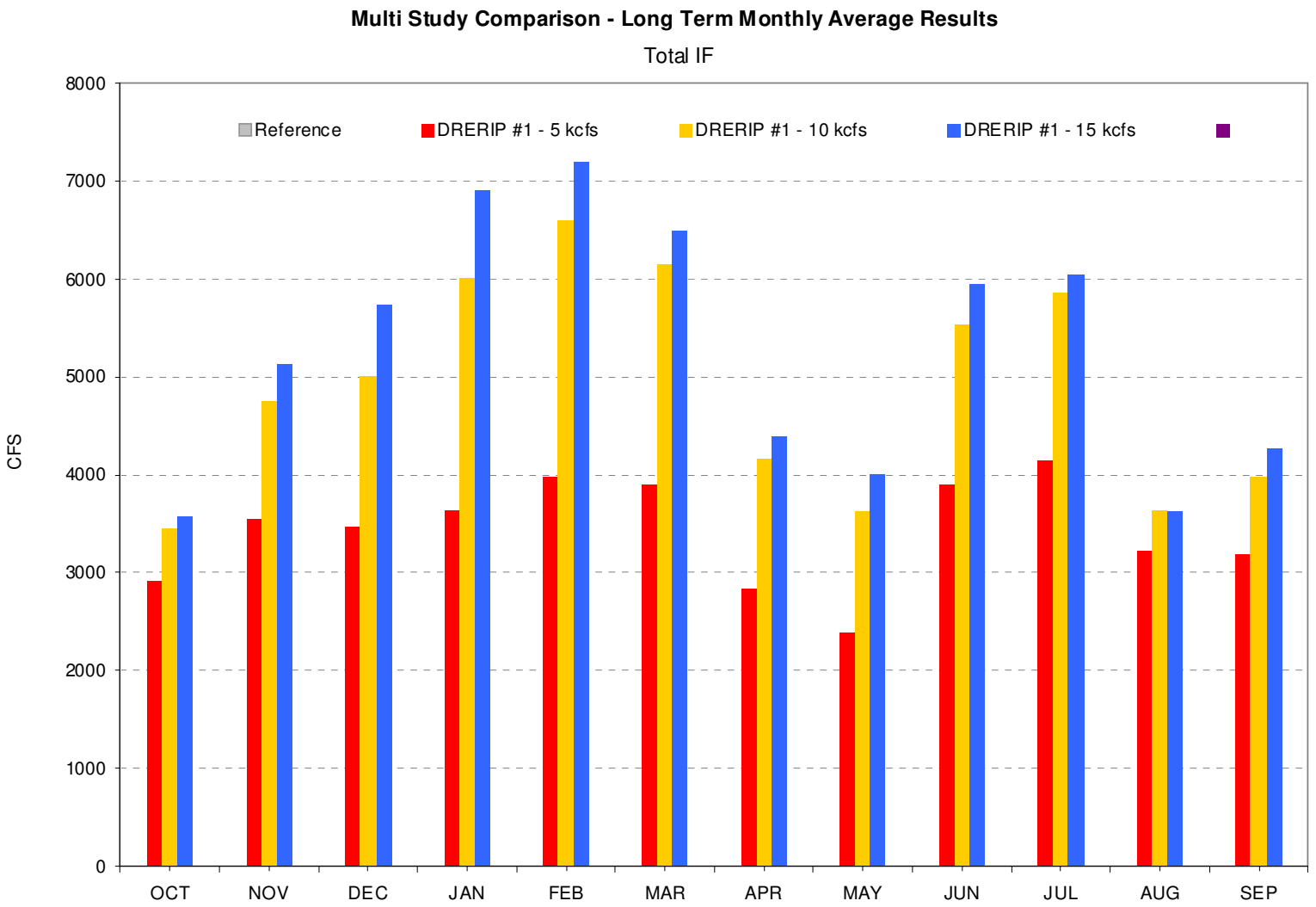
Background

- Intakes and conveyance facilities in the north Delta proposed to shift primary point of diversion from south Delta in order to
  - reduce entrainment of pelagic species,
  - allow for broader Delta habitat restoration, and to
  - provide reliable water supplies for agricultural and urban users
- Analyses performed to date have assumed a intake and conveyance facility capacity of 15,000 cfs
- Capacity assumptions based on
  - previous modeling analyses,
  - desire to match existing Banks and Jones PP physical capacities (10,300 cfs and 4,600 cfs, respectively),
  - to allow for greater diversion of peak flows during relatively environmentally-benign times,
  - and permit intermittent daily operations that may require instantaneous diversion capacity greater than the daily or monthly averages

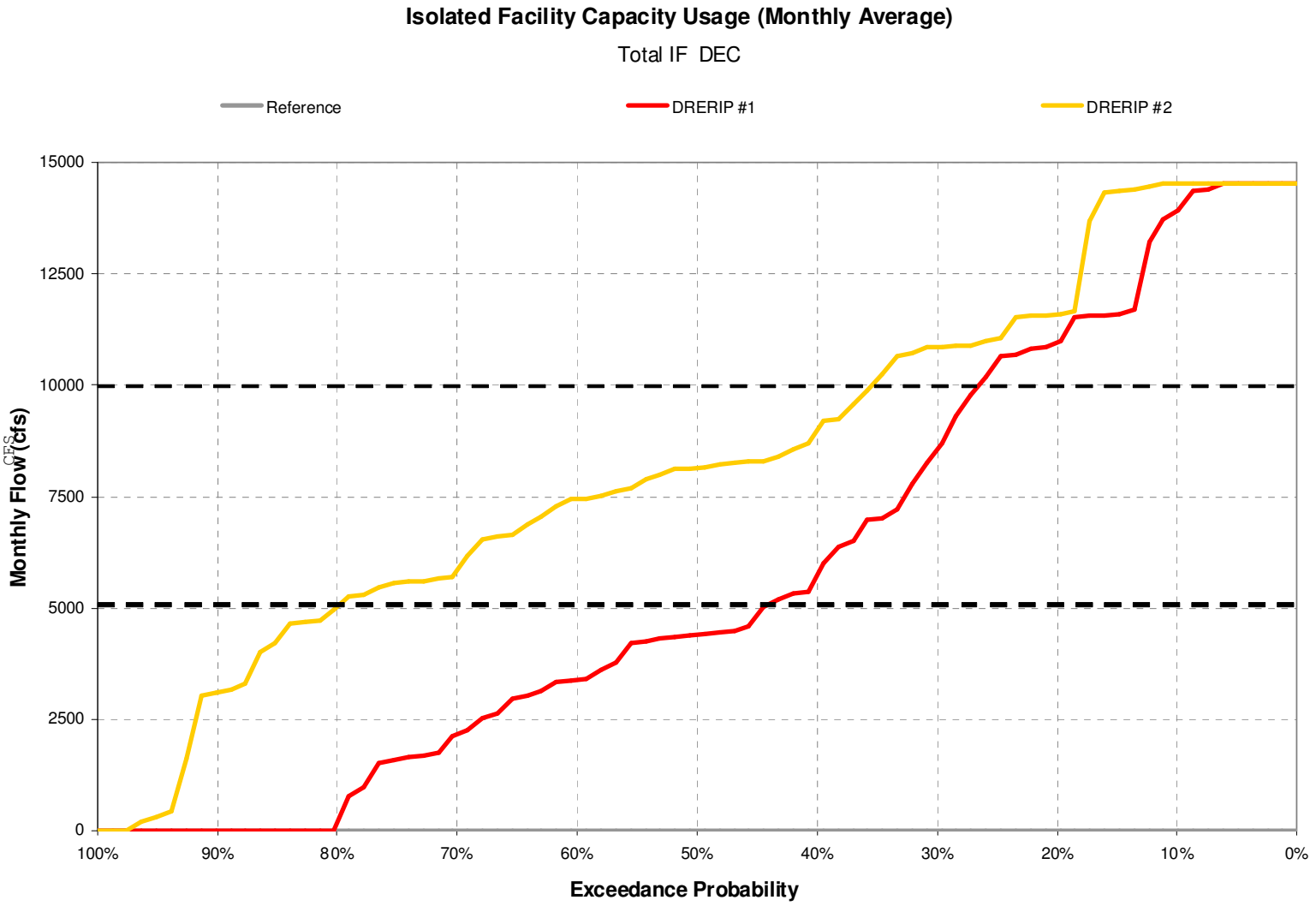
Capacity Sensitivity Study

- Purpose of this study is to evaluate changes in Delta exports and flow conditions under varying NDD diversion and conveyance sizes.
- Isolated facility capacities simulated for 5, 10, and 15 kcfs
- Scenarios developed for DRERIP evaluation used as reference conditions
- *Complete Isolation and Climate Change scenarios in progress*
- Evaluation of changes in capacity usage, exports, OMR flows, and Sacramento River flows as metrics

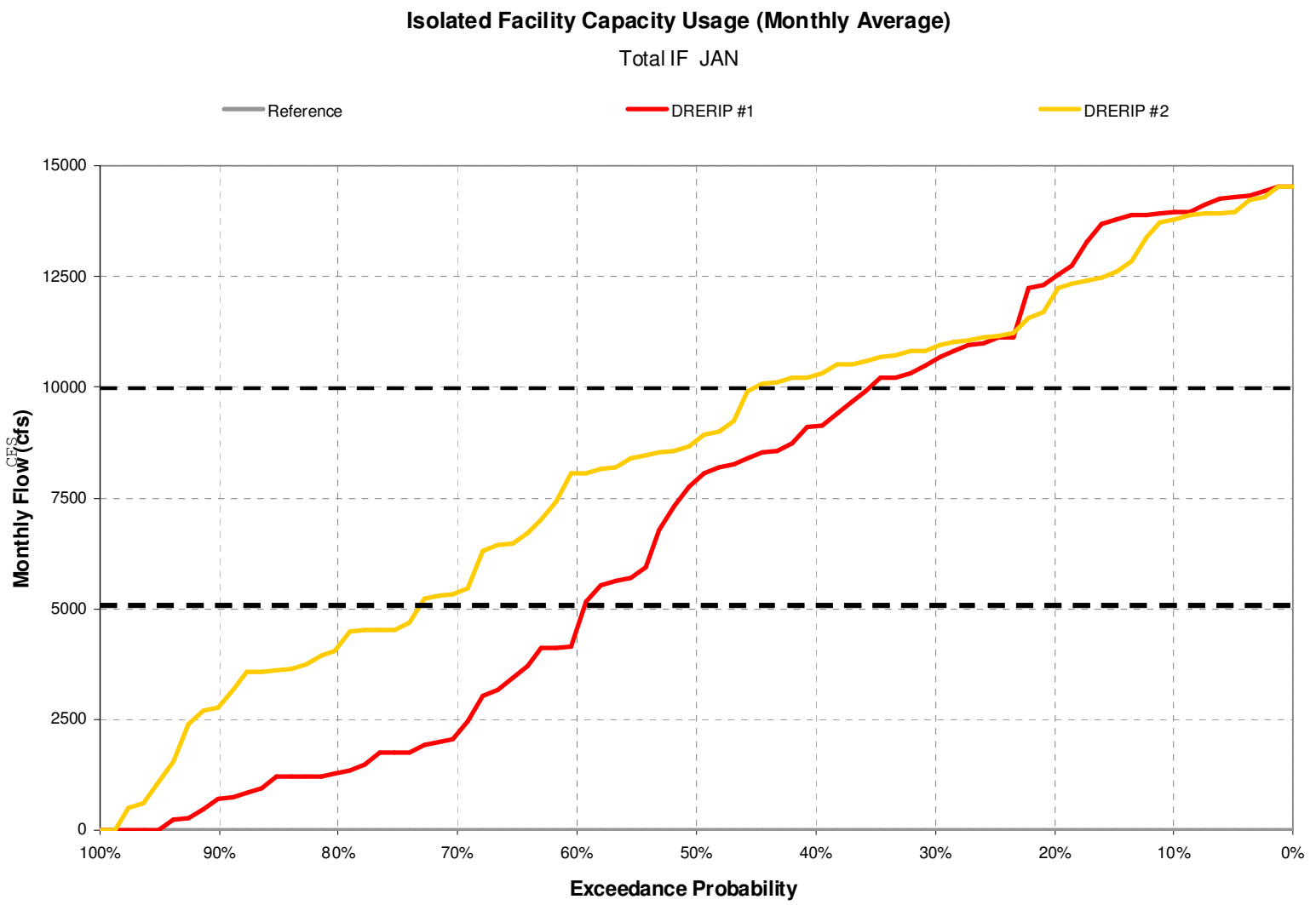
Seasonal Trend in Capacity Usage



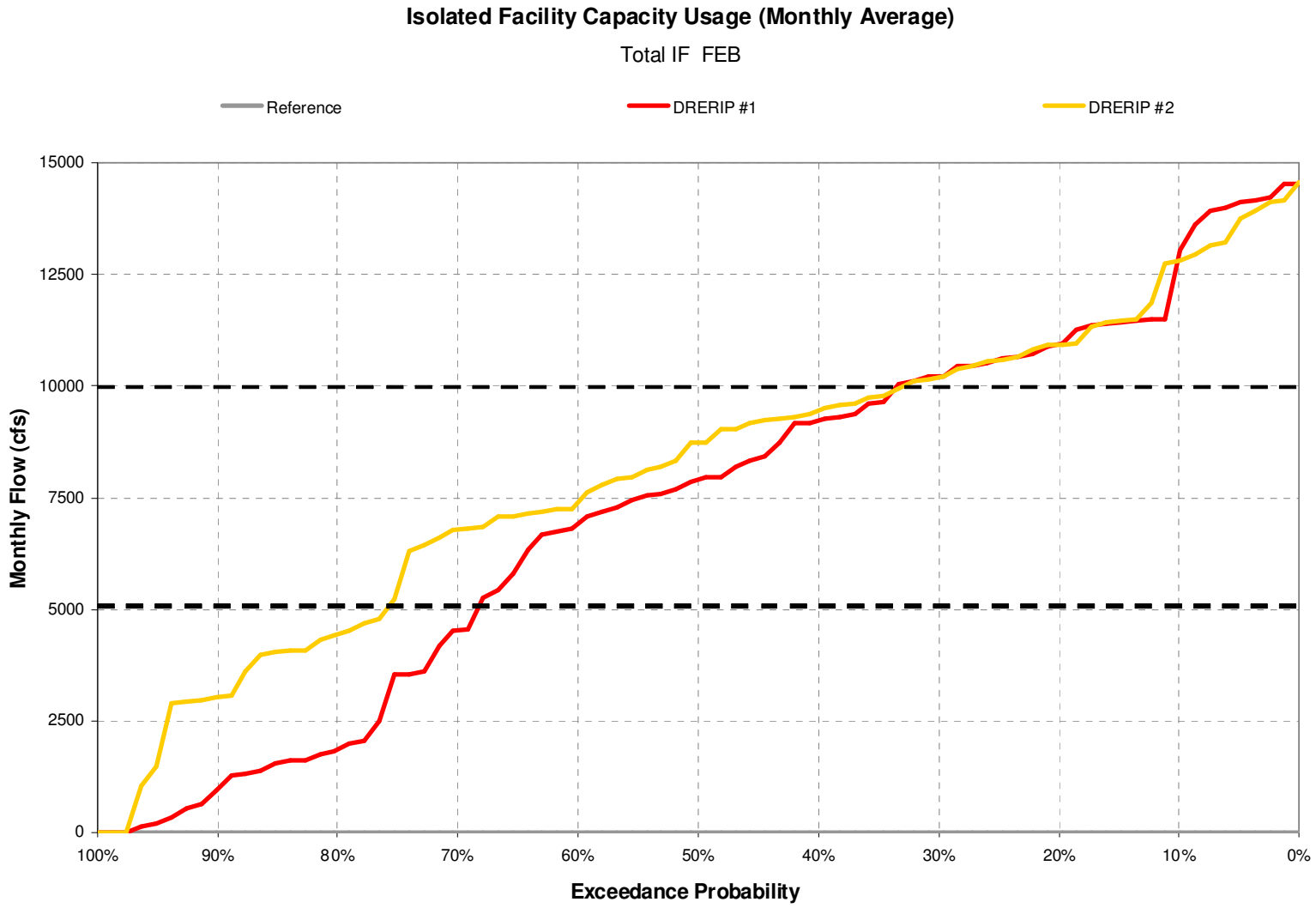
Results: IF Usage - December



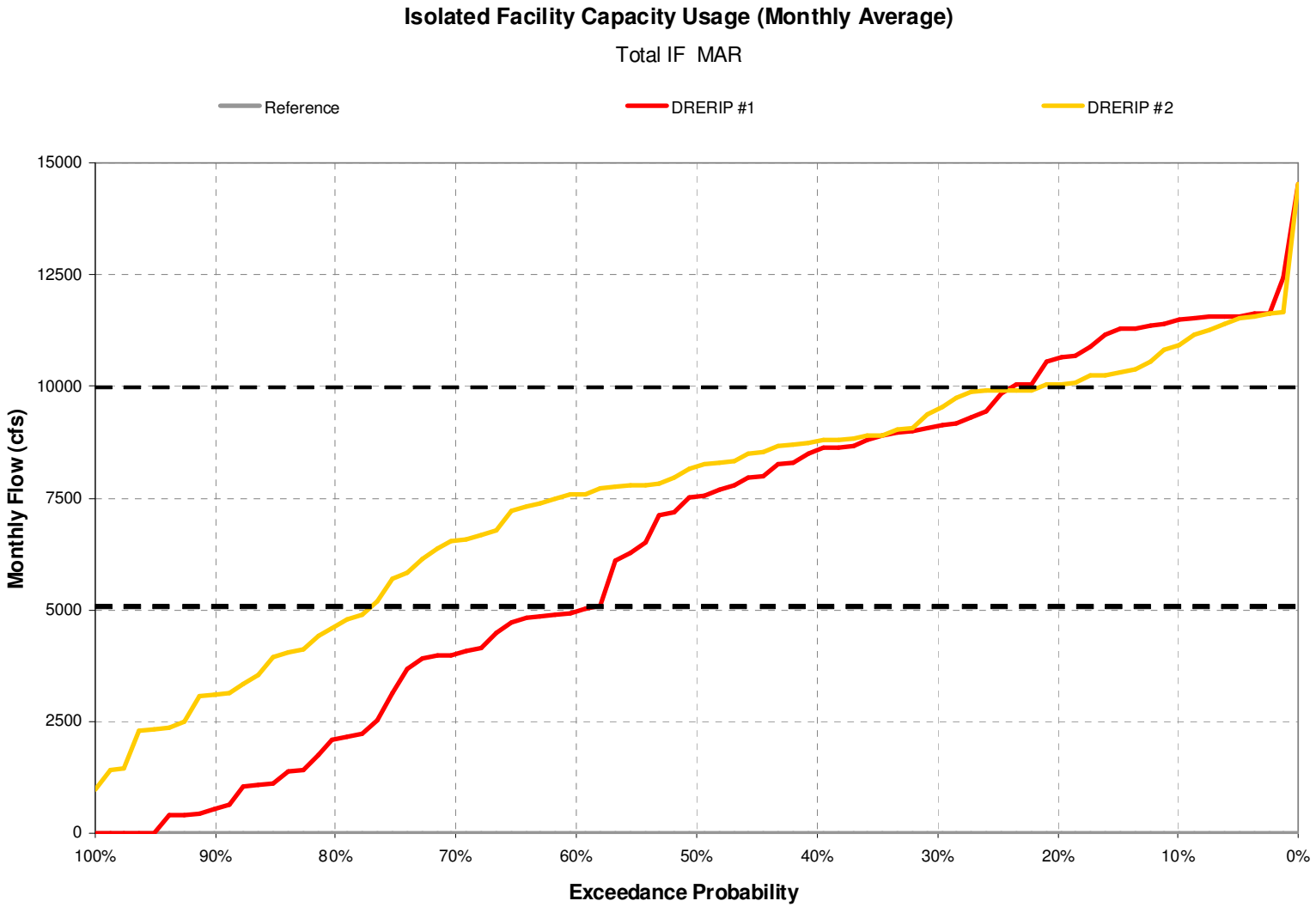
Results: IF Usage - January



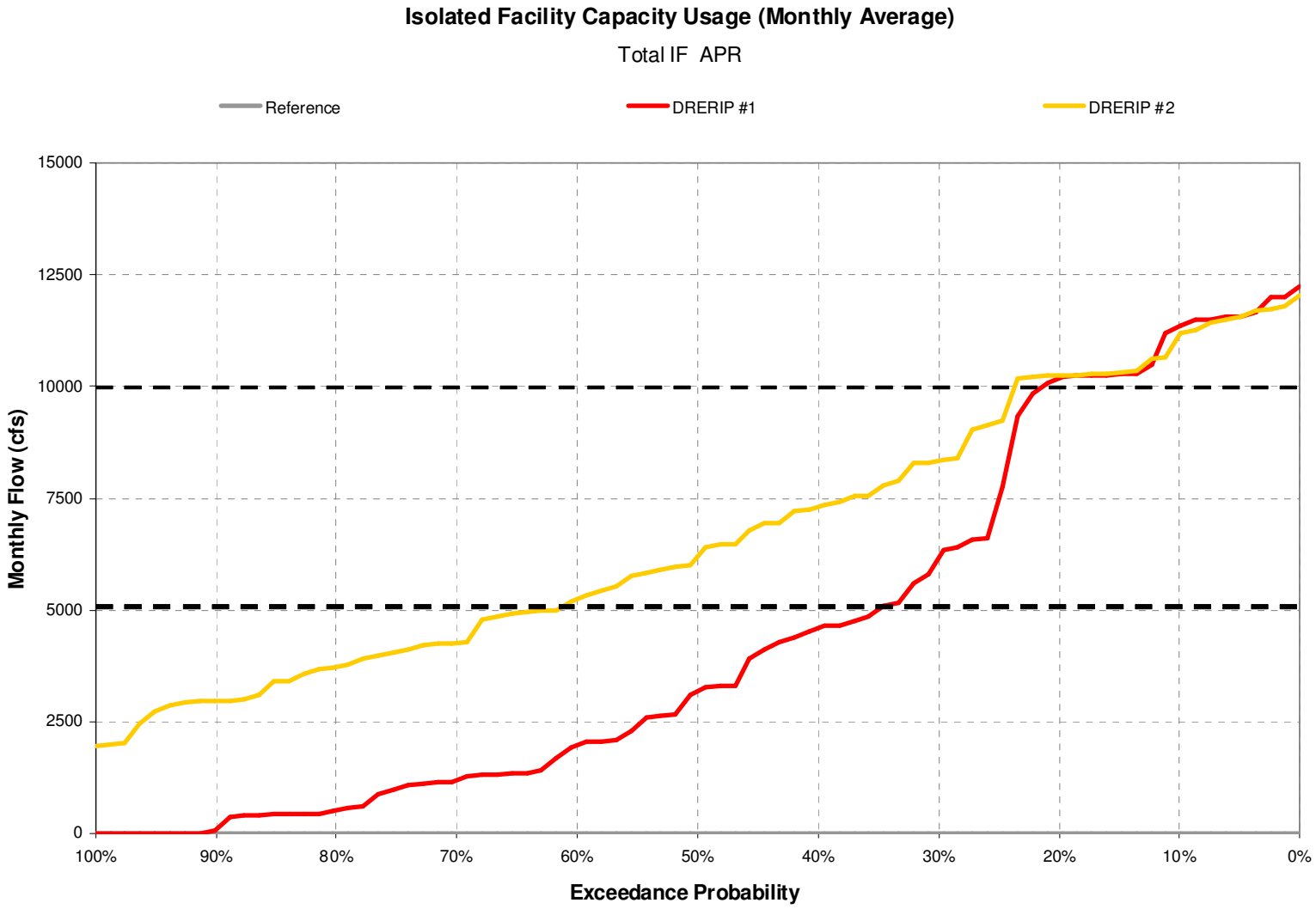
Results: IF Usage - February



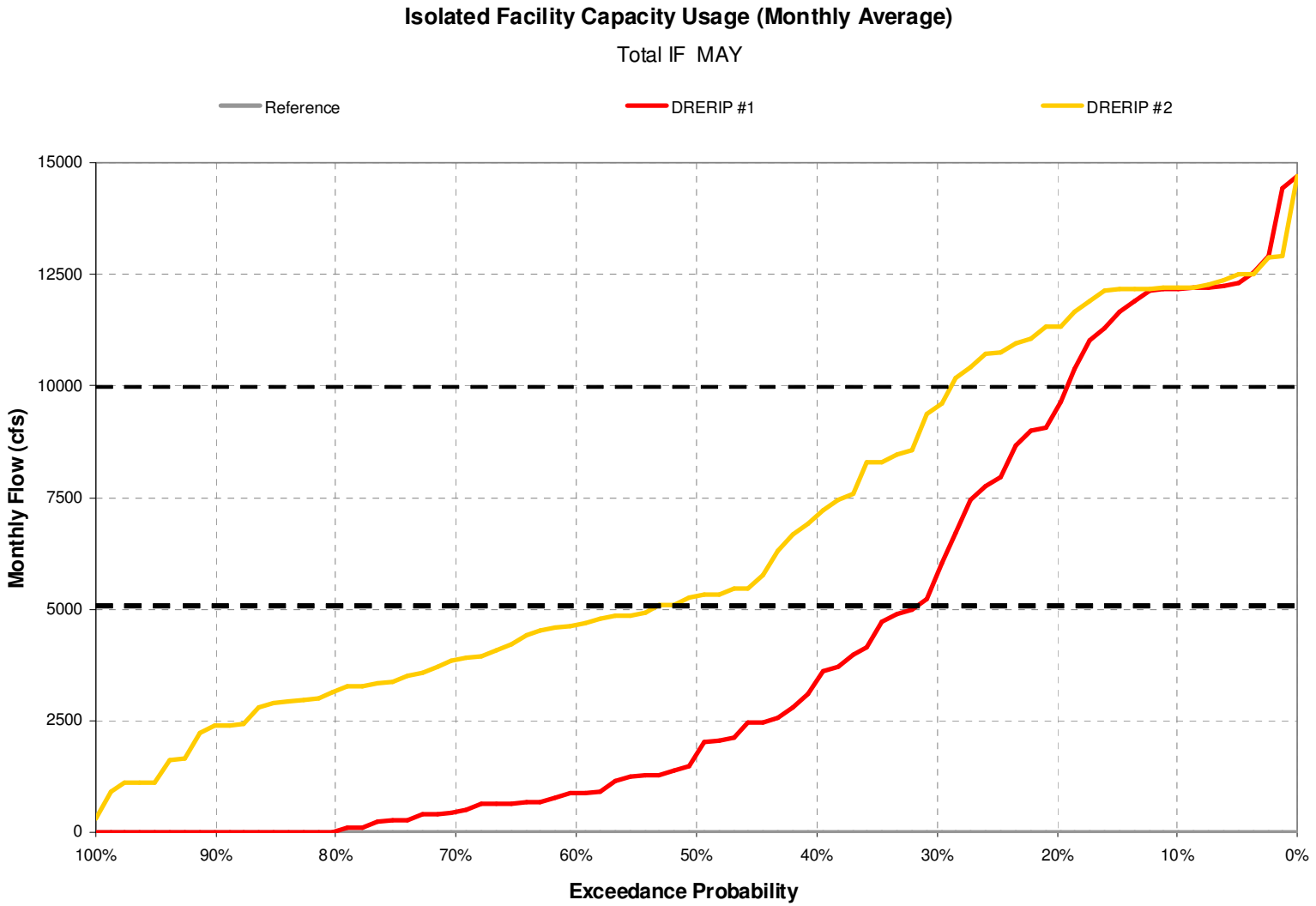
Results: IF Usage - March



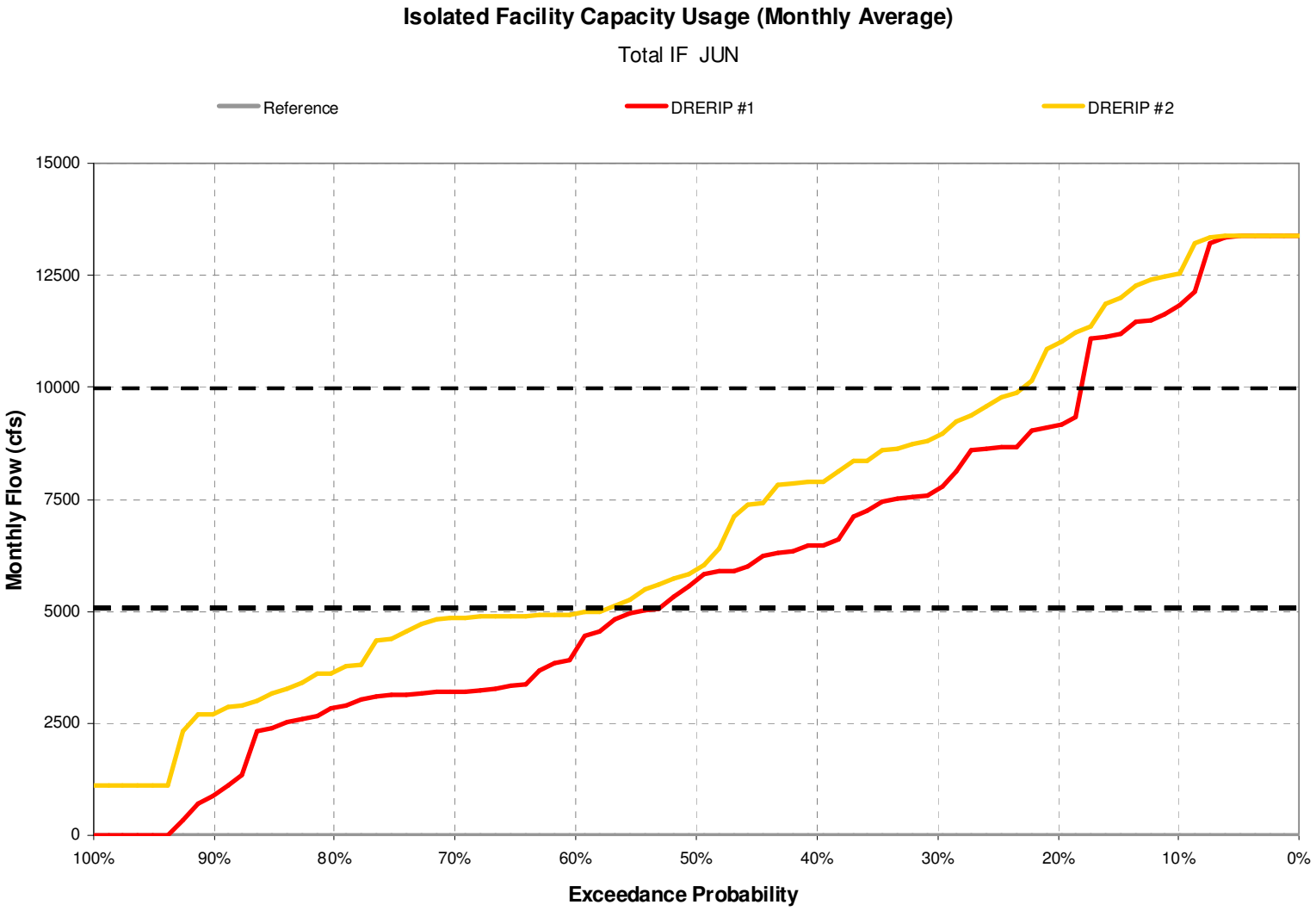
Results: IF Usage - April



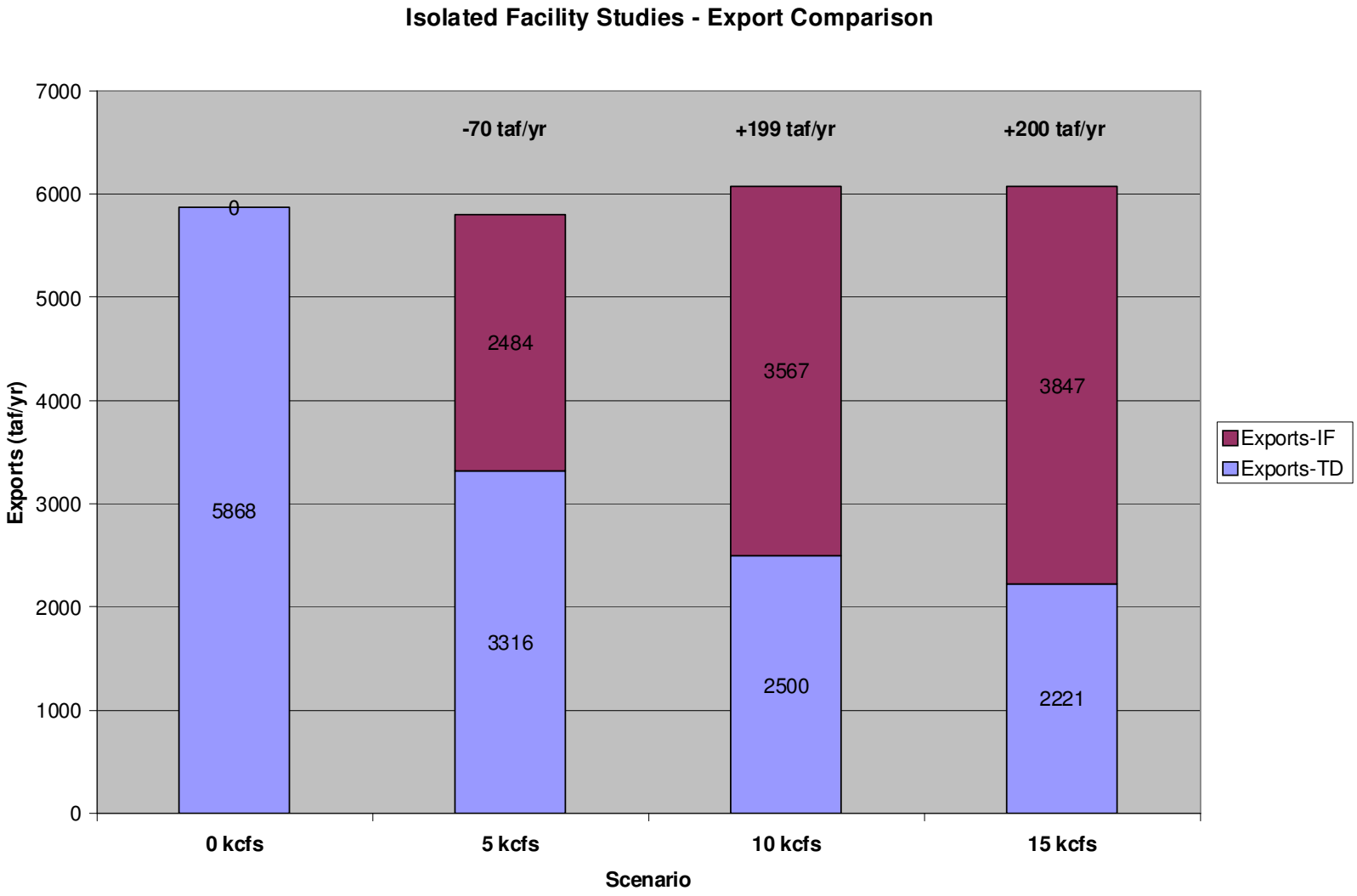
Results: IF Usage - May



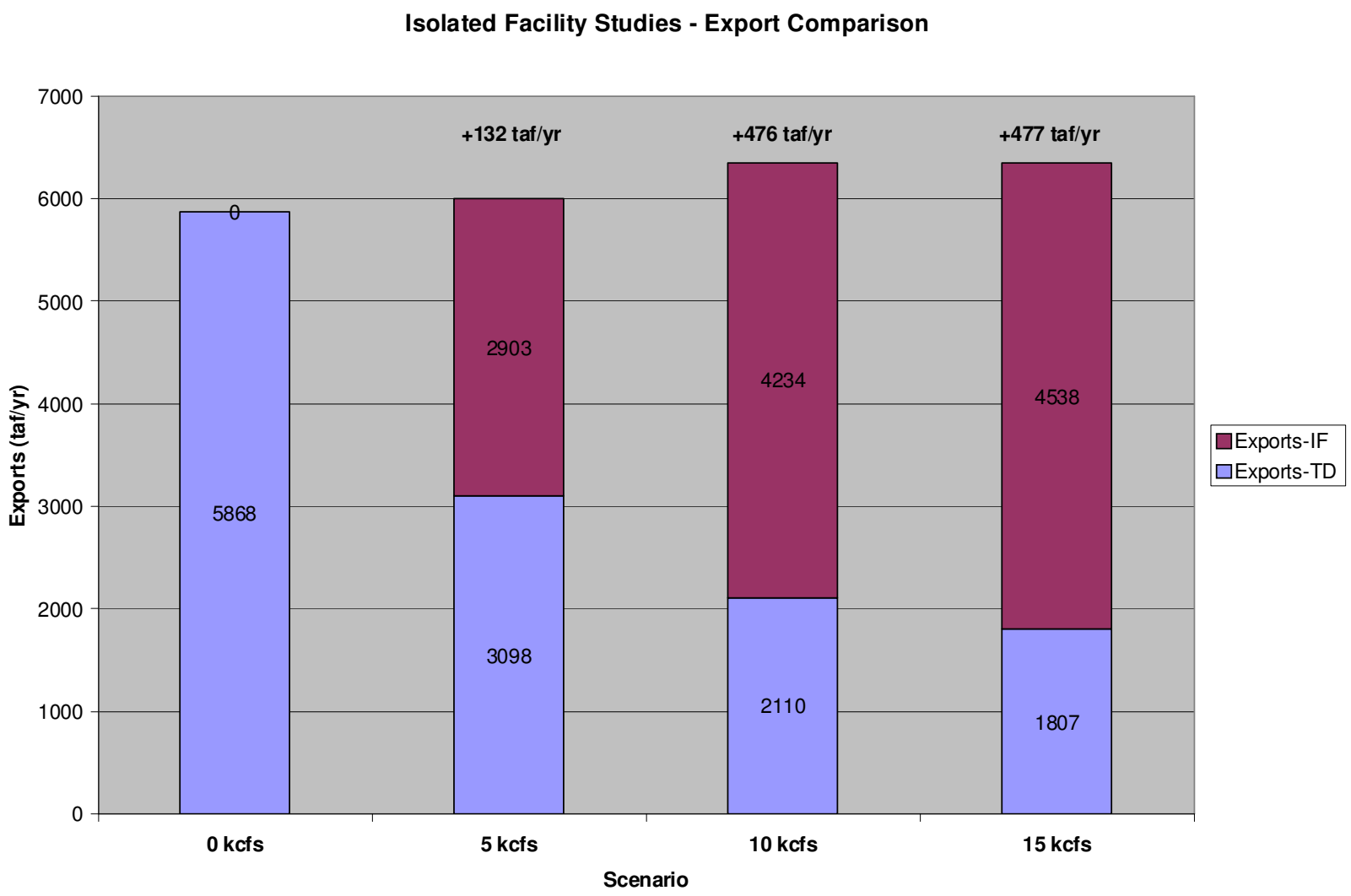
Results: IF Usage - June



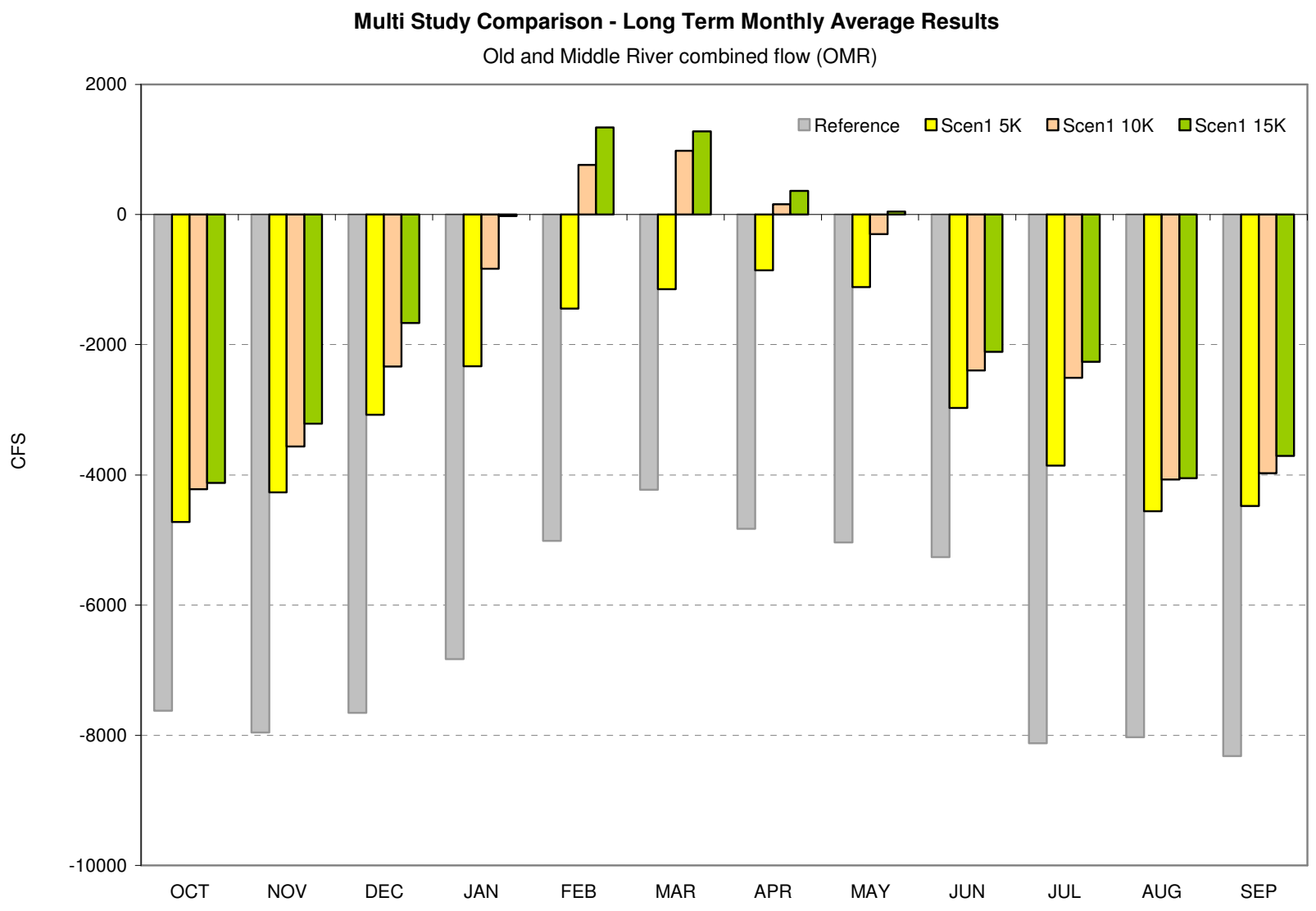
Avg Exports – DRERIP #1



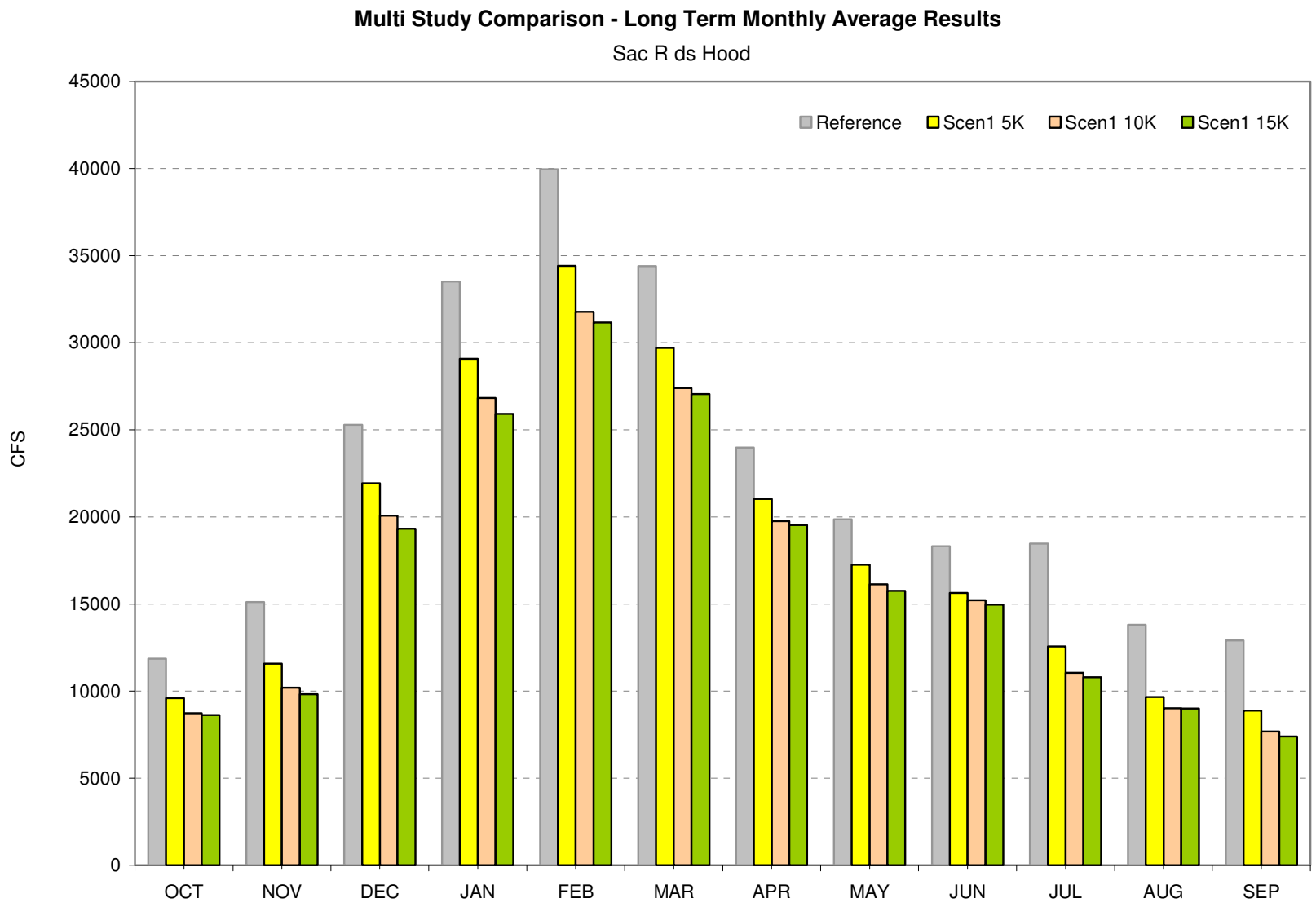
Avg Exports – DRERIP #2



Results: OMR Flows



Results: Sac R Flows



Work In-Progress

- Evaluate capacity sensitivity under climate change scenario (sea level rise and hydrology changes)
- Evaluate capacity sensitivity under fully isolated scenario

Summary

- 5 kcfs vs 10 kcfs:
  - Diversion and canal capacity of 10 kcfs provides significant benefit towards achieving water supply reliability and reducing reliance on south Delta flows
- 10 kcfs vs 15 kcfs:
  - provides greater operational flexibility to respond to fish needs,
  - provides means to maintain water supply under levee failure,
  - provides means to adapt to climate change futures,
  - provides capacity for peak/intermittent operations under daily and hourly timescales